REMARKS

Claims 1-36 are pending in this application. Claims 1-10 and 28-36 have been withdrawn from consideration as being drawn to nonelected subject matter.

Claim 11 has been amended to recite that the cross-linked polyamide is obtained by polycondensation. Support for this amendment can be found on page 6, lines 3-5. Claim 11 has also been amended to recite that the cross-linked polyimide has a dielectric constant of not more than 2.7. Support for this amendment can be found on page 6, lines 10-11.

No new matter has been added by way of the above amendments.

Election/Restriction

The Examiner has taken the position that the inventive claims lack unity of invention. The Examiner has grouped the claims as follows:

Group I, claim(s) 1-10, drawn to cross-linked polyamide composition.

Group II, claim(s) 11-27, drawn to a process for producing a cross-linked polyimide.

Group III, claim(s) 28-29, drawn to a process for producing a patterned polyimide film.

Group IV, claim(s) 30-36, drawn to electronic equipment.

In response, Applicant confirms the election of Group II, claims 11-27 with traverse.

The Examiner alleges that there is no special technical feature claimed which amounts to a contribution over the prior art. In support, the Examiner cites Lee et al. (US 6,320,019).

In response, Applicant respectfully submits that the presently claimed invention is neither anticipated by nor obvious over Lee et al. Applicant's position is discussed in detail below. As such, Lee et al. do not break the unity of invention. Based on the fact that there is unity of

invention, Applicant respectfully requests that the Examiner rejoins at least Groups I and III with the elected Group II.

Prior Art Based Issues

The following rejections are pending:

Claims 11-12, 14 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,320,019 to Lee et al.;

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of U.S. Patent Pub. No. 2001/0009936 to Suzuki et al.;

Claims 15-23, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of U.S. Patent No. 5,502,143 to Oie et al.; and

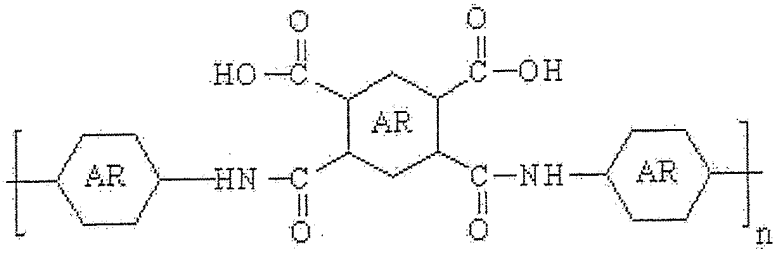
Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. in view of U.S. Patent No. 6,630,064 to Itatani.

Applicant respectfully traverses the rejections.

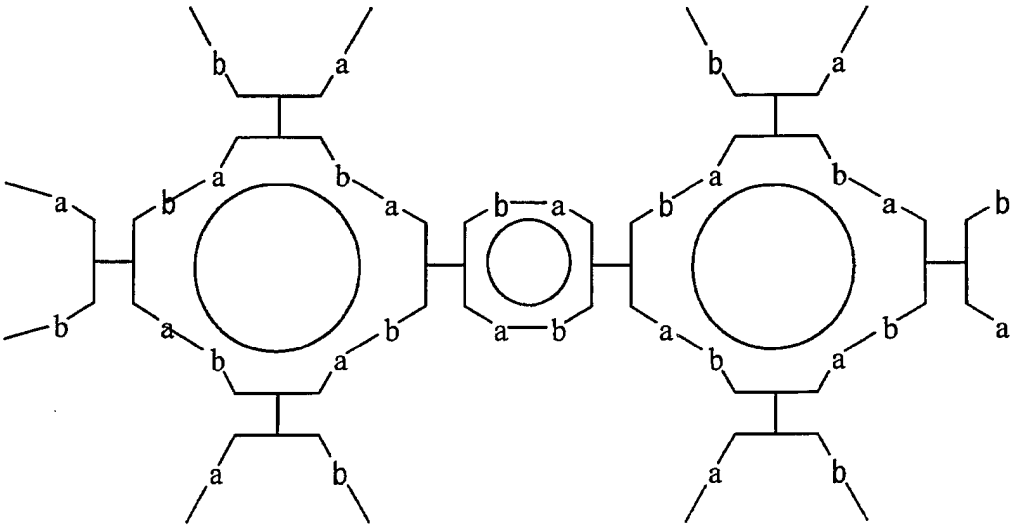
The present invention is drawn to a process for producing a composition comprising a crosslinked polyimide, said process comprising polycondensing at least a tetramine, a tetracarboxylic dianhydrides and an aromatic diamine in a polar solvent containing toluene or xylene in the presence of a catalyst under heat to give a crosslinked polyimide having a dielectric constant of not more than 2.7. This process provides a polyimide which retains the characteristics of polyimides, that is, excellent heat resistance, electrical insulation and chemical resistance, and in addition, the inventive polyimides have a dielectric constant which is lower than those of the known polyimides.

As noted above, the Examiner relies heavily on the teachings of Lee et al. in rejecting all of the claims under consideration. However, as is apparent from claim 1 of Lee et al., this reference is directed to a process of producing a polyamic acid, and not a polyimide.

A general structure of polyamic acid is as follows:



This is distinct from the polyimides formed in the inventive process. To more clearly distinguish the present invention from Lee et al., the feature "said polycondensation yielding said cross-linked polyimide" has been added to claim 11. In the present invention, by virtue of the fact that cross-linked polyimide is formed by the polycondensation, the large cyclic structure typically depicted by the following formula is formed:



wherein "a" represents the terminal tetracarboxylic dianhydride residue and "b" represents the terminal aromatic diamine residue. See page 17 of specification..

With this structure, a surprisingly low dielectric constant as low as 2.7 or less is attained (page 6, lines 7-9 of the present Description). The large cyclic structure happens to be formed only when the cross-linked polyimide is generated by polycondensation, as presently claimed.

Although Lee et al. also disclose a process of producing polyimide, the process uses imidization of the polyamic acid (see claim 3 of Lee et al). Thus, polyimide is not produced by polycondensation as presently claimed, but by imidization of the polyamic acid. By this imidization process of Lee et al, the large cyclic structure is not formed and the low dielectric constant is not attained.

Moreover, since the formation of polyamic acid in Lee et al. does not need a catalyst, Lee et al. do not disclose the use of a catalyst, as presently claimed. In contrast, to attain the formation of a polyimide as in the present invention, a catalyst is used. As recited in claim 15, it is preferred to use an acid-based binary catalyst or a lactone-based binary catalyst.

As the MPEP directs, all the claim limitations must be taught or suggested by the prior art to establish a *prima facie* case of anticipation or obviousness. See MPEP §§ 2131 and 2143.03. In view of the fact that Lee et al. fail to teach or fairly suggest a polycondensation reaction using a catalyst to obtain products having a dielectric constant of not more than 2.7, a *prima facie* case of anticipation or obviousness cannot be said to exist over the teachings of Lee et al.

With respect to dependent claims 13, 15-23, and 25-27, the Examiner appears to be aware the Lee et al. do not teach or fairly suggest the subject matter of these claims. In order to cure the deficiencies of Lee et al., the Examiner cites Suzuki et al., Oie et al. and Itatani. Applicant respectfully submits that these secondary references do not cure the deficiencies of Lee et al, as described above. As such, Applicant respectfully requests reconsideration and withdrawal of all rejections.

Conclusion

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq., Reg.

No. 43,575, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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